UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/795,991	03/10/2004	Hyun-doo Shin	Q80410	2250

23373	7590	12/20/2005

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EXAMINER
CUNNINGHAM, GREGORY F

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Advisory Action *Before the Filing of an Appeal Brief*	Application No. 10/795,991	Applicant(s) SHIN ET AL.	
	Examiner Gregory F. Cunningham	Art Unit 2676	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED <u>22 November 2005</u> FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

   a) ☒ The period for reply expires <u>3</u> months from the mailing date of the final rejection.

   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

     Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

<u>NOTICE OF APPEAL</u>

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

<u>AMENDMENTS</u>

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will <u>not</u> be entered because

   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);

   (b) ☐ They raise the issue of new matter (see NOTE below);

   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

     NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. ☐ Applicant's reply has overcome the following rejection(s): _____.

6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed: _____.

   Claim(s) objected to: _____.

   Claim(s) rejected: _____.

   Claim(s) withdrawn from consideration: _____.

<u>AFFIDAVIT OR OTHER EVIDENCE</u>

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will <u>not</u> be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will <u>not</u> be entered because the affidavit or other evidence failed to overcome <u>all</u> rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

<u>REQUEST FOR RECONSIDERATION/OTHER</u>

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: <u>See Continuation Sheet.</u>

12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____

13. ☐ Other: _____.

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Continuation of 11. does NOT place the application in condition for allowance because:

Ort et al., (US Patent Number 5,659,626) discloses in the abstract at 'A method for locating minutia in a gray scale image of a fingerprint using a pair of filters, called "Gabor" and "Minutia" filters, includes determining direction and spacing of ridges at regularly spaced pixels, aligning filters by ridge direction, determining outputs of filters where Gabor Filter has high level output when in parallel ridge flow and, due to phase discontinuity at a minutia, low level output when in neighborhood of a minutia.' and at 'A method for determining location of, associating, and determining number of ridges between cores and deltas in digitized gray scale of a fingerprint image by Direct Estimation of Orientated Patterns includes determining ridge angle and frequency at regularly spaced pixels, computing gradients of ridge angles, ordering gradient according to size, creating vector field of image, measuring curling of vector field, locating cores and deltas, tracing path of constant value ridge angle between deltas and cores, calculating line integral of vector frequency along straight line from delta to core.'

Furthermore in col. 3, lns. 23-49 at 'The Matcher component 80 of the system performs the final comparative analysis between search print and each file print. It matches minutiae between search print and file print. Matching minutiae is performed through mathematical calculation that evaluates and scores how closely minutiae in the search print are to having the same spatial and angular positioning as the candidate file print being considered. The evaluative process typically proceeds first to align the two prints, then attempts to find correspondence by pairing minutiae in the search fingerprint with what appears to be its most probable counterparts in the file fingerprint, and then proceeds to calculate and evaluate spatial and angular differences. The comparative process is complete when matching comparisons between Search Candidate prints and all candidate file prints have been made and a score for each file print comparison is available. The scores are then evaluated and those with scores that definitely indicate large dissimilarity in minutiae pattern are eliminated from the list. The remainder of the list contains File Candidates with similar and closely matching minutiae patterns. The higher the score the more that the Search Candidate's fingerprints closely match the File Candidate's fingerprints and the greater probability that the Search Candidate is the same as the File Candidate person on record in the repository file database. The list is rank ordered and the top scoring "n" number of candidates presented to the operator; the number "n" typically being set at the system operator's discretion.'

In col. 7, lns. 55-67 at 'In the present invention, minutiae are detected using a pair of matched filters. The filters are engineered so that when they encounter the spatial neighborhood of a minutia, the output of one of the filters grows large while the output of the other filter drops to zero. In areas away from minutiae, the filter outputs fluctuate about nominal values, which are indicative of the quality of the fingerprint image. The minutiae detection filters are orientated and scaled using local Ridge Angle and Ridge Frequency, which are computed from Direct Estimation of Orientated Patterns and Digital Signal Processing theory. Cores and Deltas are located by examining the gradient surface of the Ridge Angle Map.'

The "Minutia" filters that includes determining direction and spacing of ridges at regularly spaced pixels and frequency at regularly spaced pixels, find correspondence by pairing minutiae in the search fingerprint with what appears to be its most probable counterparts and generate a score for each print comparison. The higher the score the closer the match of the candidate's fingerprints i.e. (direction and spacing of ridges at regularly spaced pixels and frequency at regularly spaced pixels).

Consequently the scoring number "n" is inherently indicative of the direction and spacing of ridges at regularly spaced pixels and frequency at regularly spaced pixels and corresponds to "regularity indicator indicating regularity of the image" as claimed in independent claims 36 and 52.

J. F. Cunningham, Examiner
12/14/05